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A field office of USDA's National Agricultural Statistics Service in cooperation with the Pennsylvania Department of Agriculture

Results of the 2002 Vegetable Chemical Use Survey

(for the complete report, search on the keywords 'agricultural chemicals' at www.usda.gov/nass/search.htm)

This report, which summarizes the use of agricultural chemicals on vegetables in 2002, is issued by the National Agricultural Statistics Service (NASS) as part of its series on Agricultural Chemical Usage. Other publications in the series present statistics for on-farm agricultural chemical usage for field crops, fruits, livestock, floriculture and nursery, plus postharvest applications.

Information in this report is provided from a survey funded through the USDA Pesticide Data Program. The purpose of the Pesticide Data Program is to provide reliable pesticide use statistics and enhance the quality of information on pesticide residues in food. Multiple agencies within the USDA administer this program. This data series addresses the increased public interest in agricultural chemical use and provides the means for government agencies to respond effectively to food safety and water quality issues.

NASS collects on-farm agricultural chemical use information to support the evaluation of food safety and water quality issues. The Economic Research Service (ERS) conducts research on the impact of alternative pesticide regulations, policies, and practices. The Agricultural Marketing Service (AMS) conducts a pesticide residue monitoring program.

This report includes farm use of 2002 crop year pesticides for selected vegetable crops in 18 major producing States. Arizona, California, Florida, Georgia, Illinois, Michigan, Minnesota, New Jersey, New York, North Carolina, Ohio, Oregon, Pennsylvania, South Carolina, Tennessee, Texas, Washington, and Wisconsin.

Some pesticides are labeled for control of more than one type of pest, i.e., as an insecticide and as a fungicide. In these instances, the active ingredient is listed under the pesticide class for which is was predominantly used.

Cabbage: In the 9 States surveyed: California, Florida, Georgia, New York, North Carolina, Ohio, Pennsylvania, Texas, and Wisconsin, nitrogen was applied to 91 percent of the planted cabbage acres. Phosphate and potash were applied to 82 and 81 percent, respectively.

Herbicides were applied to 53 percent of the fresh market cabbage acres. The most commonly used herbicide was trifluralin at 29 percent, followed by s-metolachlor which was applied to 20 percent of the acreage. Insecticides were applied to 87 percent of the planted cabbage acres. The most commonly used insecticides included Bacillus thuringiensis on 52 percent of the acreage; spinosad on 38 percent; and lambda-cyhalothrin on 26 percent. Fungicides were applied on 51 percent of the acreage. Chlorothalonil was most commonly used with 33 percent of the acres being treated, followed by maneb with 17 percent.

Pennsylvania: Cabbage, Head, Fresh - Fertilizer Primary Nutrient Applications and Total, 2002

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	*Percent*	*Number*	*Lbs. per Acre*	*Lbs. per Acre*	*1,000 Lbs.*
Nitrogen		81	1.3	118	161	287
Phosphate		83	1.2	122	158	287
Potash		80	1.3	123	161	282
Total	2,200					

Pennsylvania: Cabbage, Head, Fresh - Pesticide, Planted Acreage, Percent of Area Receiving Applications and Total Applied, 2002

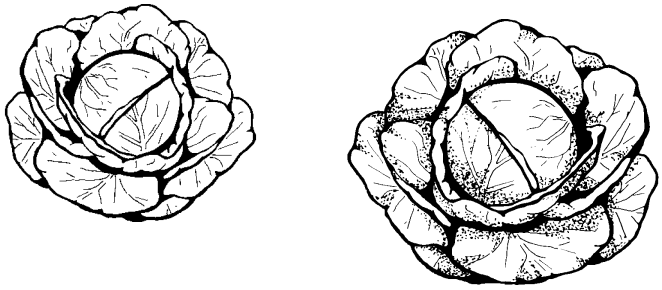
Planted Acreage	Area Receiving and Total Applied					
	Herbicide		Insecticide [1]		Fungicide	
Acres	*Percent*	*1,000 Lbs.*	*Percent*	*1,000 Lbs.*	*Percent*	*1,000 Lbs.*
2,200	47	1.3	81	5.3	45	3.2

[1] Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

Pennsylvania: Cabbage, Head, Fresh - Agricultural Chemical Applications, 2002 [1]

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	*Number*	*Lbs. per Acre*	*Lbs. per Acre*	*1,000 Lbs.*
Herbicides:					
Napropamide	3	1.0	1.54	1.54	0.1
Oxyfluorfen	5	1.0	0.38	0.38	([2])
S-Metolachlor	39	1.0	1.29	1.29	1.1
Insecticides:					
Bifenthrin	*	1.4	0.07	0.10	([2])
Bt (Bacillus thur.) [3]	40	1.7			
Carbaryl	*	2.4	0.51	1.23	([2])
Endosulfan	71	1.9	0.75	1.45	2.3
Esfenvalerate	3	2.4	0.04	0.09	([2])
Imidacloprid	*	1.1	0.14	0.16	([2])
Lambda-cyhalothrin	36	2.8	0.02	0.07	0.1
Methomyl	41	2.1	0.61	1.28	1.2
Permethrin	3	3.4	0.18	0.62	([2])
Spinosad	42	2.0	0.08	0.16	0.1
Fungicides:					
Chlorothalonil	44	2.1	1.30	2.73	2.7
Copper hydroxide	*	4.0	0.50	2.01	([2])
Mancozeb	5	1.8	1.32	2.40	0.3

* Area applied is less than one percent. [1] Planted acres in 2002 for Pennsylvania were 2,200 acres. [2] Total applied is less than 50 lbs. [3] Rates and total applied are not available because amounts of active ingredient are not comparable between products.



Melons, Cantaloupe: Nitrogen was applied to 89 percent of the planted acres in the 4 Program States: Arizona, California, Pennsylvania, and Texas. Phosphate was applied to 66 percent, and potash to 36 percent of the acres.

Herbicides were used on 29 percent of the planted acreage for cantaloupes. Trifluralin and bensulide were the most common herbicides used on 13 percent and 11 percent of the acreage, respectively. Insecticides were applied to 54 percent of the cantaloupe acres planted, with imidacloprid being the most used treating 20 percent. Diazinon was applied to 16 percent and carbaryl and spinsosad were both applied to 11 percent of the acres. Thirty-one percent of the acreage received fungicide treatment. Sulfur (9 percent) and metalaxyl (8 percent) were the most common fungicides used. Other chemicals were applied to 20 percent of the total cantaloupe acres.

Pennsylvania: Cantaloupes - Fertilizer Primary Nutrient Applications and Total, 2002

Primary Nutrient	Planted Acreage	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Acres	*Percent*	*Number*	*Lbs. per Acre*	*Lbs. per Acre*	*1,000 Lbs.*
Nitrogen		96	2.1	18	39	53
Phosphate		97	2.0	20	41	55
Potash		96	2.0	18	38	52
Total	1,400					

Pennsylvania: Cantaloupes - Pesticide, Planted Acreage, Percent of Area Receiving Applications and Total Applied, 2002

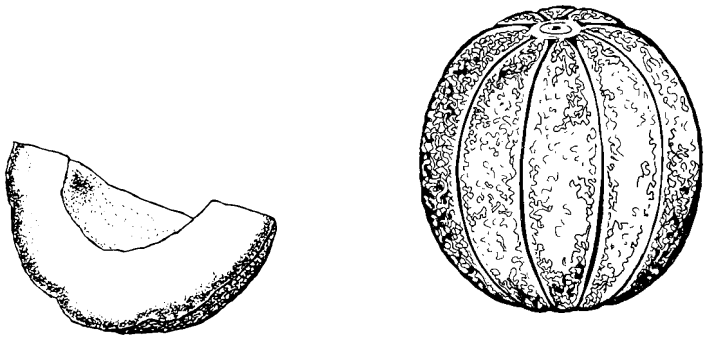
Planted Acreage	Area Receiving and Total Applied					
	Herbicide		Insecticide [1]		Fungicide	
Acres	*Percent*	*1,000 Lbs.*	*Percent*	*1,000 Lbs.*	*Percent*	*1,000 Lbs.*
1,400	61	2.4	96	2.9	93	6.0

[1] Total Applied excludes Bt's (Bacillus thuringiensis) and other biologicals. Quantities are not available because amounts of active ingredient are not comparable between products.

Pennsylvania: Cantaloupes - Agricultural Chemical Applications, 2002 [1]

Active Ingredient	Area Applied	Applications	Rate per Application	Rate per Crop Year	Total Applied
	Percent	*Number*	*Lbs. per Acre*	*Lbs. per Acre*	*1,000 Lbs.*
Herbicides:					
Bensulide	45	1.0	1.18	1.18	0.7
Glyphosate	10	1.0	0.90	0.94	0.1
Naptalam	44	1.0	2.49	2.49	1.5
S-Metolachlor	4	1.6	1.10	1.81	0.1
Insecticides:					
Azinphos-methyl	6	2.6	0.48	1.29	0.1
Bifenthrin	16	2.1	0.07	0.14	([2])
Carbaryl	60	3.0	0.71	2.19	1.8
Endosulfan	59	2.2	0.37	0.85	0.7
Esfenvalerate	13	2.1	0.04	0.08	([2])
Imidacloprid	16	1.0	0.12	0.13	([2])
Methomyl	12	1.9	0.60	1.16	0.2
Permethrin	6	2.9	0.10	0.30	([2])
Fungicides:					
Azoxystrobin	21	2.1	0.17	0.37	0.1
Benomyl	7	3.3	0.25	0.81	0.1
Chloronthalonil	84	3.2	1.31	4.22	5.0
Mancozeb	10	3.4	1.19	4.05	0.6
Metalaxyl	46	2.1	0.13	0.28	0.2
Myclobutanil	4	1.3	0.08	0.11	([2])

* Area applied is less than one percent. [1] Planted acres in 2002 for Pennsylvania were 1,400 acres. [2] Total applied is less than 50 lbs.



2002 Vegetable Crops Pest Management Practices

Prior to the 2002 crop year, vegetable crop pest management practices data were collected and published separately from the Vegetable Chemical Use Survey. The Pest Management Practices 2002 Summary is based on data compiled from respondents participating in the Vegetable Chemical Use Survey (VCUS). Producers were first asked how many total acres of vegetable crops they grew in 2002, followed by questions regarding the use of specific pest management practices, in a yes/no format. Pests were defined as weeds, insects, and diseases. If the respondent used a specific practice on any vegetable crop, it was assumed that the practice was used on all acres of vegetable crops. For example, if a producer had 500 acres of various vegetable crops, and used field mapping of previous weed problems to assist in making weed management decisions, it was assumed that all 500 acres were mapped.

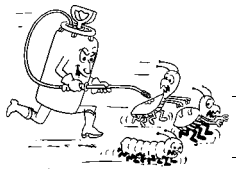
For this report, each question has been categorized into one of four pest management categories: prevention, avoidance, monitoring, and suppression. The actual questions used to collect these data are shown on pages 314-316.

The data are published in two tables: percent of acres receiving the specific pest management practice, and percent of farms using the specific pest management practice. These percentages are published at the Program States and State levels. For all the crops in this survey, the percentages refer only to farms and vegetable acres.

Highlights: The most widespread pest management practice for prevention reported was removing or plowing down crop residue, used by 72 percent of the vegetable farms on 72 percent of the acres. Also, use of tillage/etc. to manage pests ranked second as a prevention practice with 67 percent of the vegetable farms and 83 percent of the acres.

In terms of avoidance practices, rotating crops was the main one with 73 percent of the vegetable farms reporting it on 82 percent of the acreage. Sixty percent of the farms reported scouting for pests on 83 percent of the acres.

The most used pest suppression practice was to alternate pesticides with over half of the vegetable farms (53 percent) reporting it on 82 percent of the planted vegetable acres.



Pennsylvania: Pest Management Practices - All Vegetables, 2002

Practice	Percent of Acres Receiving Practice	Percent of Farms Utilizing Practice
	Percent of Acres	*Percent of Acres*
Prevention Practices:		
Tillage/etc. to manage pests	95	89
Remove or plow down crop residue	85	81
Clean implements after fieldwork	59	43
Water management practices	51	38
Avoidance Practices:		
Adjust planting/harvesting dates	43	26
Rotate crops to control pests	98	98
Alternate planting locations	86	75
Grow trap crop to control insects	35	16
Monitoring Practices:		
Scouted for pests	56	59
Records kept to track pests	25	13
Field mapping of weed problems	14	15
Soil analysis to detect pests	12	15
Pheromones to monitor pests	7	5
Weather monitoring	63	59
Suppression Practices:		
Scouting used to make decisions	30	38
Biological pesticides	22	24
Beneficial organisms	1	2
Maintain ground cover or physical barriers	44	69
Adjust planting methods	51	37
Alternate pesticides	89	81
Pheromones to disrupt mating	2	1